7/9/2004

MEMORANDUM FOR: Mission Goal Team Leads
Program Managers

FROM: D.L. Johnson

SUBJECT: FY07 – FY11 Program Baseline Assessment: NWS Priorities

This memo summarizes NWS Corporate program priorities for FY07-FY11 to enable NWS to fulfill its mission responsibilities and contribute to the NOAA Team.

Specific programmatic deficiencies or gaps are identified below, in 5 major Themes. These gaps must be addressed to achieve NOAA's strategic goals for FY07 – FY11 and to achieve the NWS vision of: 1) Providing for the health and safety of America; and 2) Delivering environmental information for improved decision making in all sectors of the U.S. economy.

We provide this information to assist Program Managers in developing the Program Baseline Assessments (PBAs) and Goal Leads in reviewing the PBAs.

NWS Priorities – Key Themes and Programs

Fact of Life/Must pay

This Theme represents the "must pay" items to enable NOAA to maintain its capability and capacity to provide weather (including Space Weather and Air Quality), water, and climate services. Failure to fund will make the NWS current mission unexecutable or cost lives:

- Fully fund federal pay raise/inflation
- IT/Web Security – ensure NOAA's IT infrastructure and Web presence are secure.
- System Communications – meet communications requirements for the Telecommunications Gateway and Weather Supercomputing systems to meet mandated continuity of operations requirements.
- Environmental safety and health – ensure regulatory compliance at all locations to protect our employees

- NOAA Profiler Network (NPN) O&M and conversion – provide necessary O&M for NPN operations as part of NOAA's observing architecture; fund required NPN frequency conversion.

- Ship time – ensure adequate ship time to maintain data buoy availability and reliability standards. (Coast Guard may not have sufficient Ops Tempo)

- Radar communications – provide for replacement of failing communications lines from WSR-88Ds to WFOs.

Priority #1 – Disseminate and Deliver NOAA's Information and Services

NOAA's NWS top priority for meeting emerging needs focuses on effectively and efficiently delivering information and services to customers when they need it and in standardized formats. Thus, NOAA wide information such as all-hazards warnings and a wide range of environmental information from an expanding customer base must be available in digital formats with the necessary supporting infrastructure.

- NOAA Weather Radio, National Warning Capabilities – ensure NWR network has capabilities to become a key component of a National All-Hazards Warning Network including: multi-point communications, service backup, redundant transmitters with backup power, 95% population coverage in every state, and replacement of obsolete transmitters.

- NOAA Enterprise-wide service delivery system – NWS is NOAA's primary service delivery outlet. AWIPS is the primary product generation and information delivery asset in NWS. To meet growing customer demands for information across multiple disciplines and timescales, and to meet the research and operational workstation needs of all mission goals and NOAA lines, AWIPS must be transformed into an NOAA enterprise-wide service delivery system that incorporates:
    - Adequate capacity to support next generation model data, observing systems (radar, satellite, surface), and digital services
    - Adequate IT refresh and Web page capability to enable delivery of digital services
    - Ability to provide a backbone for other applications across NOAA (such as ecosystems management, and climate change assessment); establish a one-stop shop for integrated NOAA services and information
    - Geographic Information System standard capability for delivering services and information in geographic formats

- Outreach/education – ensure customers understand NOAA products and know how to use them. Ensure proficiency of field staff in warning operations and delivery of digital services.

Priority #2 – Predict Future Hazards

Capabilities: NOAA's must acquire new capabilities to support customer demand for improved predictions:

- Water resource information – Advance science to improve water resource forecasting and service delivery for improved local decision making and contributions to ecosystem management. Support implementation of a National Integrated Drought Information System (NIDIS). Add water quality forecasting capability to help address and manage projected fresh water shortage.

- Fire weather – extend outlooks; provide scaled incident information and services for improved decision making for fire fighting and prescribed federal burn operations.

- Improve International efforts to address Medium Range forecasting and climate variability
  - Fund international commitments to THORPEX to improve accuracy of 1-14 day forecasts
  - Contribute to International Polar Year (IPY) efforts to understand recent climate variability in the poles

- Public health – NWS's modeling and forecast infrastructure will enable NOAA to extend traditional weather, water, and climate products to predicting and warning of events that may affect human health:
  - Provide Heat Health watch and warnings capability Nationwide
  - Continue expansion of Air quality ozone forecasts; accelerate particulate matter research and forecast implementation

  - See water quality forecasting above.

- Space weather products – Accelerate transition of new space weather models and products into operations.

- Intraseasonal to interannual climate forecast products - provide new products out to 15-45 days and improve existing products to improve economic decision making and resource management.

- Suite of products - marine, aviation and surface transportation – establish a suite of forecast products that address key transportation information needs including extended forecasts and higher product frequency.

- Coasts, estuaries, and oceans – improve and provide new integrated products and services for Coasts, Estuaries, and oceans building on the Ocean Commission Report

Enablers: The above capabilities require the following enablers; proven methods and approaches that if capitalized on, will provide critical means to improving predictions:

- Modeling/data assimilation –adequate data assimilation and modeling resources to effectively use in-situ and remotely sensed data in prediction models; establish an Earth System Model Framework to facilitate and accelerate modeling advances in weather, water, and climate from the academic community into operations.

- NEXRAD (improve tornado prediction) – improve and accelerate use of high resolution radar data in prediction models

- Regional and local climate services delivery – fully resource Regional climate services program to deliver downscaled and regionally specific forecasts including probabilities and frequency of high impact events; ensure local stewardship of the historical record; and provide local customer outlets for all NOAA climate services.

- Climate observation continuity measurements – ensure climate community can measure instrument bias as we upgrade upper air radiosondes.

- Water Quality Backbone – contribute to development of a national water quality monitoring network as recommended in the Ocean Commission

- Accelerate research into operations
  - Testbeds for operational model systems – establish new testbeds for weather, water, and climate prediction to accelerate research into operations.
  - USWRP – accelerate efforts to improve QPF, Hurricane at landfall/intensity forecast efforts.

Priority #3 – Observations / Data

NOAA must address gaps in the observing architecture to ensure continuity of observations; establish cost effective approaches for future integrated observing capability; and meet NOAA's Global environmental observing system of systems (GEOSS) commitments:

- Reconnaissance and targeted operations – experimental observations need to be made routine and operational to populate higher resolution prediction models.

- GEOSS – support NOAA's observing system architecture and contribute to providing global environmental observations through a system of integrated observations. Integration into broader observing systems is desired to maximize return from a multiple NOAA mission goal perspective:
  - Integrated Surface Observing System (ISOS) –
    - Cooperative Observer Network Modernization/National Mesonet – continue efforts to improve the density, frequency and reliability of surface observations through modernizing the COOP network and incorporating high quality mesonet data from around the country.
  - Integrated Upper Air Observing System (IUAOS) -
    - Water vapor; MDCRS; radiosonde – establish an integrated upper air observing system by providing the "best mix" of existing and future UA observing data sets.
    - Radiosonde Logistics – ensure sufficient resources for GPS radiosonde logistics.
  - Integrated Ocean Observing System (IOOS) – Continue efforts to expand the use of NOAA's marine observing network and incorporate regional observations through partnerships.

- Space observations – plan for continuity of solar wind and other parameters monitor capability

- Lightning data network – expand to incorporate cloud to cloud; over oceans.

- FAA radars – ensure ability to incorporate full suite of FAA radar data into operational data stream.

- Deep Ocean Assessment and Reporting of Tsunami (DART) buoys – provide for O&M costs separate from the Tsunami Hazard Mitigation Program.

Priority #4 – Accelerate Advances in Medium Range Forecasting.

Support Undersecretary's proposal to create a World-Class Environmental Prediction Center. WCEPC provides required human resources and expertise for model development and data assimilation tasks and focuses additional resources on a single medium range global forecasting system. These actions will accelerate the rate of forecast skill improvement provide the World's best prediction system.

- Data assimilation and modeling – expand data assimilation and modeling efforts in conjunction with the planned collocation of the NOAA Center for Weather and Climate Prediction at the University of Maryland; retain top scientists in fields of expertise from the academic community.

- Unified Global Forecast System – acquire necessary HPC capacity and dedicated infrastructure to run a single global forecast system model that unifies weather and short-term climate predictions. Advance predictive skill out to day 14, accelerate rate of improvement in this range, and utilize the same modeling system for seasonal to interannual predictions.

Priority #5 – Facilities. Provide proper facilities maintenance to ensure employee safety and operational reliability; continue planned facilities correction and modernization efforts to provide adequate working and living conditions for employees.